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AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions of claims in the application.

Listing of Claims:

Claim 1 (Previously Presented): A semiconductor structure for light emitting devices that can emit in the red to ultraviolet portion of the electromagnetic spectrum, said structure comprising:

a silicon carbide substrate;

a conductive buffer layer;

a first n-type cladding layer of $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$, where $0 \leq x \leq 1$ and $0 \leq y < 1$ and $(x + y) \leq 1$;

a second n-type cladding layer of $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$, where $0 \leq x \leq 1$ and $0 \leq y < 1$ and $(x + y) \leq 1$, wherein said second n-type cladding layer is further characterized by the substantial absence of magnesium;

an active layer of $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$, where $0 \leq x < 1$ and $0 \leq y \leq 1$ and $(x + y) \leq 1$, wherein said active layer is n-type and is positioned between said first n-type cladding layer and said second n-type cladding layer; and

a p-type layer of a Group III nitride, wherein said second n-type cladding layer is positioned between said p-type layer and said active layer;

wherein said first n-type cladding layer has a first surface in contact with said conductive buffer layer and a second surface in contact with said active layer;

wherein said first and second n-type cladding layers have respective bandgaps that are each larger than the bandgap of said active layer.

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Claim 2 (original): A semiconductor structure according to Claim 1, wherein said active layer has a first surface and a second surface, said first surface of said active layer being in contact with said first n-type cladding layer and said second surface of said active layer being in contact with said second n-type cladding layer.

Claim 3 (original): A semiconductor structure according to Claim 1, wherein said second n-type cladding layer has a first surface and a second surface, said first surface of said second n-type cladding layer being in contact with said active layer, and said second surface of said second n-type cladding layer being in contact with said p-type layer, wherein the composition of said second n-type cladding layer is progressively graded such that the crystal lattice at said first surface of said second n-type cladding layer more closely matches the crystal lattice of said active layer, and the crystal lattice at said second surface of said second n-type cladding layer more closely matches the crystal lattice of said p-type layer.

Claim 4 (original): A semiconductor structure according to Claim 1, wherein said p-type layer is in contact with said second n-type cladding layer, opposite said active layer.

Claim 5 (original): A semiconductor structure according to Claim 1, wherein said second n-type cladding layer consists essentially of $\text{Al}_x\text{Ga}_{1-x}\text{N}$, where $0 < x < 1$.

Claim 6 (original): A semiconductor structure according to Claim 1, wherein said active layer consists essentially of $\text{In}_y\text{Ga}_{1-y}\text{N}$, where $0 < y < 1$.

Claim 7 (original): A semiconductor structure according to Claim 1, wherein said p-type layer is magnesium-doped gallium nitride.

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Claim 8 (original): A semiconductor structure according to Claim 7, wherein said second n-type cladding layer is thick enough to deter migration of magnesium from said p-type layer to said active layer, yet thin enough to facilitate recombination in said active layer.

Claim 9 (original): A semiconductor structure according to Claim 1, wherein said p-type layer is indium nitride.

Claim 10 (original): A semiconductor structure according to Claim 1, wherein said p-type layer is $\text{In}_x\text{Ga}_{1-x}\text{N}$, where $0 < x < 1$.

Claim 11 (original): A semiconductor structure according to Claim 1, wherein said p-type layer comprises a superlattice formed from a plurality of Group III nitride layers selected from the group consisting of gallium nitride, indium nitride, and $\text{In}_x\text{Ga}_{1-x}\text{N}$, where $0 < x < 1$.

Claim 12 (original): A semiconductor structure according to Claim 11, wherein said superlattice is formed from alternating layers of two Group III nitride layers selected from the group consisting of gallium nitride, indium nitride, and $\text{In}_x\text{Ga}_{1-x}\text{N}$, where $0 < x < 1$.

Claim 13 (original): A semiconductor structure according to Claim 1, further comprising a third n-type layer of $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$, where $0 \leq x \leq 1$ and $0 \leq y < 1$ and $(x + y) \leq 1$, wherein said third n-type layer is positioned between said second n-type cladding layer and said p-type layer.

Claim 14 (currently amended): A semiconductor structure according to Claim 13, wherein said third n-type layer has a first surface and a second surface, said first surface of said third n-type layer being in contact with said ~~p-type layer~~ second n-type cladding layer and said second surface of said third n-type layer being in contact with said ~~second n-type~~

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~~cladding layer~~ p-type layer.

Claim 15 (canceled)

Claim 16 (previously presented): A semiconductor structure according to Claim 1, further comprising discrete crystal portions selected from the group consisting of gallium nitride and indium gallium nitride, said discrete crystal portions positioned between said first n-type cladding layer and said conductive buffer layer, said discrete crystal portions being present in an amount sufficient to reduce the barrier between said first n-type cladding layer and said conductive buffer layer, but less than an amount that would detrimentally affect the function of any resulting light emitting device formed on said silicon carbide substrate.

Claim 17 (canceled)

Claim 18 (Previously Presented): A semiconductor structure according to Claim 16, wherein said conductive buffer layer has a first surface and a second surface, said first surface of said conductive buffer layer being in contact with said silicon carbide substrate and said second surface of said conductive buffer layer being in contact with said first n-type cladding layer.

Claim 19 (Previously Presented): A semiconductor structure according to Claim 16, wherein said conductive buffer layer consists essentially of aluminum gallium nitride having the formula $\text{Al}_x\text{Ga}_{1-x}\text{N}$, where $0 < x < 1$.

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Claim 20 (Previously Presented): A semiconductor structure according to Claim 16, further comprising an n-type transition layer of a Group III nitride, said transition layer being positioned between said conductive buffer layer and said first n-type cladding layer.

Claim 21 (Currently Amended): A semiconductor structure according to ~~Claim 16~~ Claim 1, further comprising discrete crystal portions selected from the group consisting of gallium nitride and indium gallium nitride, said discrete crystal portions positioned between said conductive buffer layer and said silicon carbide substrate, said discrete crystal portions being present in an amount sufficient to reduce the barrier between said conductive buffer layer and said silicon carbide substrate, but less than an amount that would detrimentally affect the function of any resulting light emitting device formed on said silicon carbide substrate.

Claim 22 (Canceled)

Claim 23 (Canceled)

Claim 24 (Canceled)

Claim 25 (Canceled)

Claim 26 (Canceled)

Claim 27 (Canceled)

Claim 28 (Canceled)

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Claim 29 (Canceled)

Claim 30 (Canceled)

Claim 31 (Canceled)

Claim 32 (Canceled)